

REMARKS

Claims 1-13 have been canceled without prejudice or disclaimer. Claims 14-30 have been added and therefore are pending in the present application. Claims 14-30 are supported by claims 1-13.

The specification has been amended to provide a cross-reference to the prior non-provisional application.

It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

I. The Restriction Requirement

The Office Action maintained the restriction requirement between the following groups:

Group I – claims 1-5 drawn to methods of producing animal feed compositions comprising a protease of SEQ ID NO: 1,

Group II – claims 1-5 drawn to methods of producing animal feed compositions comprising a protease of SEQ ID NO: 2,

Group III – claims 6-10 and 13 drawn to animal feed additives and compositions comprising a protease of SEQ ID NO: 1,

Group IV – claims 6-10 and 13 drawn to animal feed additives and compositions comprising a protease of SEQ ID NO: 2,

Group V – methods of treatment of vegetable proteins comprising a protease of SEQ ID NO: 1, and

Group VI - methods of treatment of vegetable proteins comprising a protease of SEQ ID NO: 2.

As mentioned in Applicants's prior response, the amino acid sequences of proteases of SEQ ID NOS: 1 and 2 are homologous. Thus, a search of Group I would necessarily encompass a search of Group II. Thus, there would not be a serious burden to examine Groups I and II together. For the same reason, there would not be a serious burden to examine Groups V and VI together.

As mentioned in Applicants's prior response, the amino acid sequences of proteases of SEQ ID NOS: 1 and 2 are homologous. Thus, a search of Group I would necessarily encompass a search of Group II. Thus, there would not be a serious burden to examine Groups I and II together. For the same reason, there would not be a serious burden to examine Groups V and VI together.

II. The Objection to Claims 3-5

The Office objected to claims 3-5. These claims have been cancelled without prejudice or disclaimer. Therefore, the objection is rendered moot.

III. Abstract of the Disclosure

The Office Action objected to the specification because it does not contain an abstract. This is respectfully traversed.

The application as filed included an abstract at page 45. Applicants therefore submit that this objection has been overcome.

IV. The Rejections of Claims 1-5 under 35 U.S.C. 101 and 112

Claims 1-5 are rejected under 35 U.S.C. 112 as being indefinite and under 35 U.S.C. 101 because the claims do not recite process steps.

Claims 1-5 have been cancelled without prejudice or disclaimer. Furthermore, the newly presented method claims recite process steps. Therefore, this rejection has been overcome.

V. The Rejection of Claims ? under 35 U.S.C. 103

Claims 1-5 are rejected under 35 U.S.C. 103 as being unpatentable in view of Bedford et al. (WO 96/05739) in view of Snow-Brand-Milk-Prod. (JP 02255081). This rejection is respectfully traversed.

Snow-Brand-Milk-Prod. merely disclose a *Nocardiopsis* protease. However, Snow-Brand-Milk-Prod. do not teach or suggest the use of proteases in animal feed.

Bedford et al. disclose feed additives comprising a xylanase and a protease and optionally a beta-glucanase. At page 25, Bedford et al. discloses that the protease may be one of the following commercially available proteases: NEUTRASE™, PURAFECT™, SAVINASE™, MAXACAL™, DURAZYM™ and MAXAPEM™, or a mutant subtilisin described in one of a number of published patent applications. None of the proteases described in Bedford et al. is an acid-

1. The following table shows FCR and DM results in the Bedford et al. study. The DM results shown in Bedford et al. do not prove Bedford et al.'s allegations of improved FCR

The only experiments using a protease described in Bedford et al. are provided in Examples 2 and 5.

In the experiment described in Example 2, chickens were treated with a control animal feed (with no enzymes), an animal feed designated "Z", which is identical to the control except that it also contains xylanase, three animal feeds designated "A," "C," and "E", which are identical to Z except that they contain the protease NEUTRASE™, and three animal feeds designated "B," "D" and "F", which are also identical to Z except that they contain a modified *Bacillus amyloliquefaciens* subtilisin protease.

The results, which are provided in Table 4, show that the use of the control animal feed and the animal feed designated Z resulted in an FCR of 1.85, the use of the animal feeds designated A, C and E resulted in an FCR of 1.85, 1.85 and 1.82 (i.e., two of the animal feeds containing the protease NEUTRASE™ resulted in the same FCR as the control animal feed and the animal feed designated Z), and the use of the animal feeds designated B, D and F resulted in an FCR of 1.82, which is only a fraction below the FCR obtained with the control animal feed and the animal feed designated Z. There is no statistical difference between the results obtained using the control animal feed and the animal feed designated Z, on the one hand, and the results obtained using the animal feeds designated A-F, on the other hand. Thus, the results of Example 2 would not suggest to one of ordinary skill in the art that there is an improvement in FCR by using a protease in an animal feed.

Similarly, the results in Example 5 shown in Table 9, do not demonstrate that there is any statistical difference between using a protease-free animal feed and a protease-containing animal feed. Thus, the results of Example 5 also would not suggest to one of ordinary skill in the art that there is an improvement in FCR by using a protease in an animal feed.

On the other hand, the instant application demonstrates in Example 3 that the protease of SEQ ID NO: 1 (*Nocardiopsis* sp. NRRL 18262 protease) has a statistically and significantly better effect on protein solubilization. These results are surprising and unexpected.

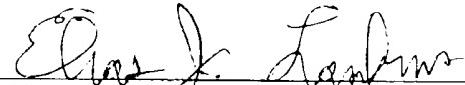
For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 103. Applicants respectfully request reconsideration and withdrawal of the rejection.

allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to

contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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